Amend claim 14 as follows:

14. (Twice Amended) A method for forming a field effect transistor, comprising the steps of:

providing a region of semiconductor material doped a first conductivity type;

forming a source of [opposite] said first conductivity type and a drain of [opposite] said first conductivity type, both said source and said drain disposed in said region of semiconductor material and separated by a counterdoped channel region disposed in said region of semiconductor material;

said counterdoped channel formed by doping said channel region with a first dopant to form a first doped region of opposite conductivity type;

doping said channel region with a second dopant to form a second doped region underlying the first doped region of said opposite conductivity type, said second doped region having a lower effective dopant concentration than said first doped region, said second doped region being the primary conduction channel between said source and said drain.

REMARKS

Claims 1, 3 and 14 have been amended. Claims 1 and 3 to 14 remain active in this application.

Claims 1 to 17 (it is presumed that claims 1 and 3 to 17 were intended since claim 2 was previously cancelled) were rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, has possession of the claimed invention. In this regard, the Examiner states that the specification discloses at

page 7, lines 3-5, that the subsurface layer can be the primary conduction channel. The Examiner further states that claim 2 as originally filed discloses the channel region having a subsurface layer of lower dopant concentration than the surface layer and then states that these two features are never taught together in the same embodiment. While the claims are in error in stating that the source and drain are of opposite conductivity type and this has been corrected, the Examiner appears to overlook the fact that the channel region is formed by counterdoping and is not of the same conductivity type as the substrate. Since counterdoping takes place, the channel region is doped ab initio with the underlying region having more dopant. Note that in one example it is stated that the region 28 may not be counterdoped at all as set forth in the sentence bridging pages 5 and 6 of the specification. In this embodiment there can be no question but that the subsurface layer of the channel 26 contains more dopant material but has a lower effective dopant concentration due to the cancellation caused by the introduction of both n and p type dopant than does the surface layer of the channel 28. Accordingly, the rejection is respectfully traversed.

Claims 7 to 11 were rejected under 35 U.S.C. 103(a) as being unpatentable over Hiura et al. (U.S. 5,586,073). The rejection is respectfully traversed.

Claim 7 requires, among other features, a substrate of a first conductivity type containing a plurality of field effect transistors, at least one of the field effect transistors having a counterdoped channel of opposite conductivity type. No such structure is taught or suggested by Hiura et al. Note that the channel of Hiura et al. is of the same conductivity type as the substrate.

Claim 7 further requires a source of the first conductivity type (the same as the substrate) adjacent to the channel and a drain of the first conductivity type adjacent to the channel and

spaced from said source, all disposed in the substrate. No such structure is taught or suggested by Hiura et al.

Claim 7 yet further requires that the counterdoped channel comprise a first doped region of the opposite conductivity type and a second doped region underlying the first doped region of the opposite conductivity type, the second doped region having a lower effective dopant concentration than the first doped region, said second doped region being the primary conduction channel between said source and said drain. No such structure is taught or suggested by Hiura et al.

Claims 8 to 11 depend from claim 7 and therefore define patentably over Hiura et al for at least the reason presented above with reference to claim 7.

Claim 8 further limits claim 7 by requiring that the channel of the field effect transistor further comprise a surface doped layer overlying the subsurface doped layer. No such combination is taught or suggested by Hiura et al.

Claim 9 further limits claim 8 by requiring that the surface doped layer comprise a first concentration of a dopant and that the subsurface doped layer comprise a second concentration of the dopant, the first concentration being greater than the second concentration. No such combination is taught or suggested by Hiura et al.

Claim 10 further limits claim 9 by requiring that the dopant comprise an n-type dopant. No such combination is taught or suggested by Hiura et al.

Claim 11 further limits claim 8 by requiring that the surface doped layer comprise a first dopant and that the subsurface doped layer comprise a second dopant different from the first dopant. No such combination is taught or suggested by Hiura et al.

Since claims 1, 2 to 6 and 12 to 17 have not been rejected on prior art, it is assumed that these claims should now be allowable in view of the arguments presented above with reference to the rejection under section 112, first paragraph.

In view of the above remarks, favorable reconsideration and allowance are respectfully requested.

Respectfully submitted,

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